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(71) Applicant (for all designated States except FR): **SERVICES PETROLIERS SCHLUMBERGER [—/FR]; 42, rue Saint Dominique, F-75007 Paris (FR).**

(71) Applicant (for all designated States except BF, BJ, BR, CA, CF, CG, CI, CM, CZ, FR, GA, GB, GN, GQ, GW, IN, JP, LT, MA, ML, MR, NE, NL, OM, SD, SN, TD, TG, TN, TR, TT, US, VN): **SCHLUMBERGER TECHNOLOGY B.V. [—/NL]; Parkstraat 83-89, NL-2514 JG The Hague (NL).**

(71) Applicant (for all designated States except GB, JP, NL): **SCHLUMBERGER HOLDINGS LIMITED; PO Box 71, Craigmuir Chambers, Road Town, Tortola (VG).**

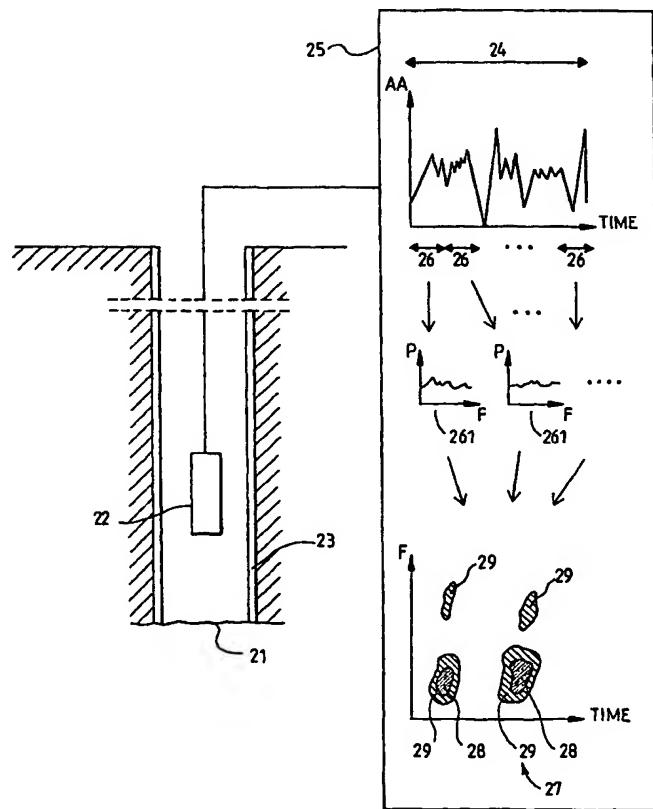
(71) Applicant (for all designated States except CA): **SCHLUMBERGER CANADA LIMITED [CA/CA]; 525 3rd Avenue S.W., Calgary, Alberta T2P 0G4 (CA).**

(71) Applicant (for all designated States except CN): **SCHLUMBERGER OVERSEAS S.A. [PA/PA]; 8 Calle Aquilino de la Guardia, Panama City (PA).**

(71) Applicant (for all designated States except OM, SD, SY, TR): **SCHLUMBERGER OILFIELD ASSISTANCE LIMITED; Craigmuir Chambers, Road Town, Tortola (VG).**

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(54) Title: **METHOD AND APPARATUS FOR ACOUSTIC DETECTION OF A FLUID LEAK BEHIND A CASING OF A BOREHOLE**



(57) Abstract: An acoustic detection of a discrete acoustic signal allows to detect a leak behind a casing (23) of a borehole. An acoustic amplitude (AA) is sampled during a recording time period (24 ; 64) at a determined position along the tube. Time intervals (26 ; 66) are defined inside of the recording time period (24), and for each time interval (26) the measured acoustic amplitudes are processed to obtain respectively a corresponding power-frequency spectrum (261). A plurality of the power-frequency spectra are analyzed to identify the discrete acoustic signal by detecting time and frequency dependant changes of power. Preferably the processing involves a Fourier transform analysis. A power-frequency time plot is used to conveniently identify the discrete acoustic event.



(71) **Applicant (for all designated States except BR):** SCHLUMBERGER SURENCO S.A. [PA/PA]; 8 Calle Aquilino de la Guardia, Panama City (PA).

(71) **Applicant (for all designated States except TT):** SCHLUMBERGER SERVICES LIMITED; P.O. Box 438, Tortola (VG).

(71) **Applicant (for all designated States except EG):** SCHLUMBERGER SEACO INC. [PA/PA]; 8 Calle Aquilino de la Guardia, Panama City (PA).

(71) **Applicant (for BF, BJ, CF, CG, CI, CM, CZ, GA, GN, GQ, GW, IN, LT, MA, ML, MR, NE, SN, TD, TG, TN, VN only):** PETROLEUM RESEARCH AND DEVELOPMENT N.V. [NL/NL]; De Ruyterkade 62, Willemstad, Curaçao (AN).

(72) Inventors; and

(75) **Inventors/Applicants (for US only):** JAMES, Simon [GB/FR]; c/o Etudes et Productions Schlumberger, 1, Rue Henri Becquerel, B.P. 202, F-92142 Clamart Cedex (FR). FITZGERALD, Peter [GB/FR]; c/o Etudes et Productions Schlumberger, 1, Rue Henri Becquerel, B.P. 202, F-92142 Clamart Cedex (FR).

(74) **Agent:** MENES, Catherine; Etudes et Productions Schlumberger, 1, Rue Becquerel, BP 202, F-92142 Clamart Cedex (FR).

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